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Comparison of growth indices to assess nursery habitat quality for juvenile flatfish
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Abstract:

Many juvenile flatfish species are dependent on shallow water coastal nurseries for obtaining food, shelter and rapid growth during this vulnerable life stage. The quality of nursery habitat is commonly assessed by measuring the growth of juvenile fish. Higher growth rates result in successive improvements in feeding, predator avoidance and ultimately survival. The present study compares 3 different growth indices for juvenile plaice and dab in nursery habitats in Galway Bay, Ireland. Sampling was carried out in the summers of 2008 and 2009 using a beam trawl for the collection of flatfish which were immediately stored in liquid nitrogen. The three indices examined were: condition derived from length weight residuals, otolith size at age and nutritional condition expressed as the RNA: DNA ratio. Significant temporal and spatial variation in condition was noted and linked with variation in biotic and abiotic factors. Growth rates also revealed differences between flatfish species. The value of the three indices in representing different facets of the history of juvenile plaice and dab growth is discussed in relation to their use as indices of nursery ground quality.

Keywords:

habitat quality, condition indices, juvenile flatfish, Ireland, Galway Bay.

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